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EVIDENCE FOR TWO ROUTES OF POST-PLEISTOCENE DISPERSAL IN *POANES VIATOR* (*HESPERIIDAE*)

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THE SEDGE-FEEDING MARSH BUTTERFLY and skipper fauna of eastern and central North America shows many interesting distributional phenomena which were analyzed in an earlier paper (Shapiro, 1971). That investigation grew out of the observation that the Broad-Winged Skipper, *Poanes viator* (Edwards), was distributed in a variant of the Coastal Plain — Great Lakes pattern familiar to plant geographers. At that time there were no confirmed records in the Mississippi Valley from northern Iowa, Illinois and Indiana (all within the glaciated area) to west-central Mississippi (in the Mississippi Embayment, part of the Coastal Plain province). Many experienced collectors were contacted in the search for such records. In their absence it was inferred that *P. viator*, like *Euphyes bimacula* (Grote & Robinson), had dispersed northward along the Atlantic Coastal Plain from a glacial refugium in the Deep South and subsequently colonized the Great Lakes region from the east, perhaps via the Hudson-Mohawk connective across New York State. At the conclusion of that study I stated that "new information may well require the re-evaluation of many of the ranges discussed in this paper." Such information is now at hand for *P. viator*. The critical new records are:

IOWA: Muskrat Slough, Jones County, 5 July 1971, *leg.* S. Miller (Miller, 1972). This is at the terminal moraine in east-central Iowa.

KENTUCKY: Reelfoot National Wildlife Area, Fulton County, 28 May 1977 and 5 June 1977, *leg.* L. Gibson and R. Henderson (Covell, 1977).

MISSISSIPPI: Bluff Lake, Oktibbeha County, 19 August 1972, and 9.3 mi E Louisville, Winston County, 12 September 1972, both *leg.* C. T. Bryson (*Bryson, in litt.*.)

TEXAS: Double Bayou, Chambers County, 13 June 1971, *leg.* A. M. Shapiro (in collection of U.C. Davis).

When these records are added to the map of the range of *P. viator* given in Shapiro (1971), they provide a strong case for the northward postglacial dispersal of *P. viator* on both sides of the Appalachians (but not in them, as in *Speyeria idalia* (Drury)).

The sharp phenotypic and biological disjunction between *viator* populations across the well-documented distributional break in New York State led to the naming of a subspecies, *zizaniae* Shapiro — the larger Coastal Plain entity. Now that a few relict Mississippi Valley populations are known it is possible that the subspecies will be found to intergrade clinally from north to south in this part of the range. All of the records reported here are based on short series, and nothing can yet be said in any statistical sense. However, the opportunity is now present to test the alternative hypotheses for the origin of the Great Lakes populations, both of which are possible. If *viator* entered the Great Lakes from the south and then dispersed eastward to its present limit in central New York and north-central Pennsylvania, the easternmost populations — being the most recent and farthest removed from the source — might be expected to differ the most from *zizaniae*. If *viator* entered the Great Lakes from the east and then spread south — and westward, the southern-most Great Lakes populations might be expected to be the most differentiated from *zizaniae*.

If the Great Lakes - Coastal Plain pattern is potentially explicable in this species by double migration (with the two groups of populations never coming into contact across New York), the same may be true for many or most of the species discussed in Shapiro, 1971. The best evidence will always be extant relict populations. Many populations of marsh species might have been eradicated in the Mississippi Valley during the Xerothermic interval, giving rise to the present pattern of apparent disjunction. All range extensions for the species discussed in the 1971 paper are of potential biogeographic interest and deserve wide publicity.

LITERATURE CITED

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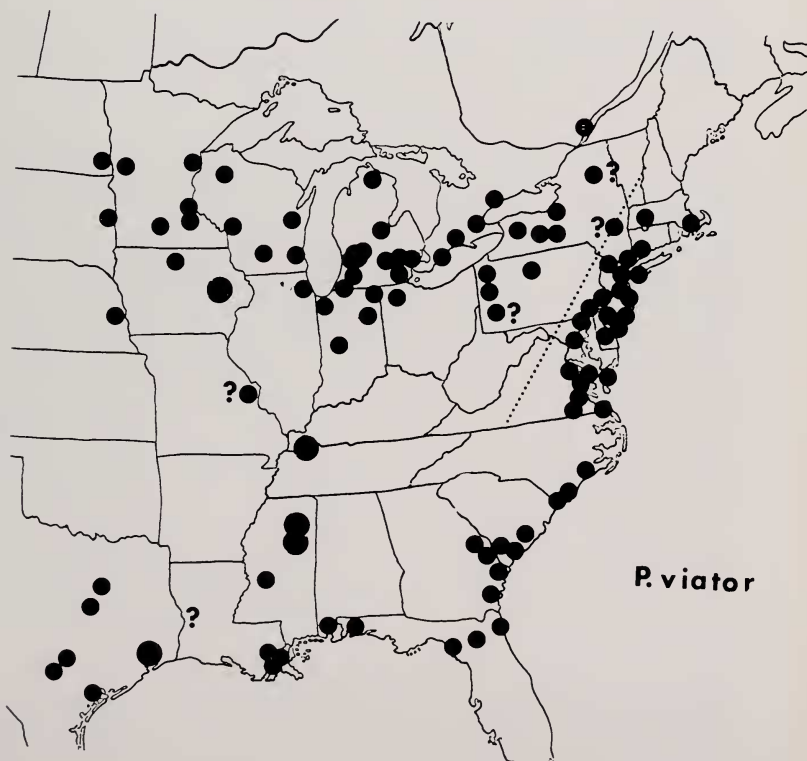


Fig. 1. — Distribution of *Poanes viator* (Shapiro, 1971), with new records shown by large dots. Dotted line in northeast indicates distributional break between coastal subspecies *zizaniae* Shapiro and nominate *viator*.